

CENTRAL INTELLIGENCE AGENCY

Chemical and Ammunition Plant in BEKETOVKA near STALINGRAD.

25X1 1. May 1946 to October 1947

a. The Chemical Combine No 91 is in BEKETOVKA ($48^{\circ}34'N/44^{\circ}28'E$), immediately south of STALINGRAD ($48^{\circ}45'N/44^{\circ}25'E$) between the double-track railroad line to TIKHORETSK ($45^{\circ}52'N/40^{\circ}09'E$) and the right bank of the Volga River. The Volga River makes a sharp bend to the east at BEKETOVKA.

b. The large Stalgres Power Plant is close to the Combine, separated only by the railroad line. The generators of the power plant are operated by six coaldust fired steam boilers and 10 steam turbines. It supplied power to the residents and industries of STALINGRAD and surroundings.

c. The chemical factory proper is in a series of buildings scattered over a wide area. Source made only superficial observations. One important plant department, designated "Tsekh IV", produced chloride of lime which was shipped in 50 kg cardboard barrels. Its work force was 30 Soviets and about 200 PWS. [redacted]

25X1 [redacted] 80 tons had to be loaded in each 10-hour shift.

d. In some rooms of the departments I and VIII many paper bales were stored, some of Finnish and Japanese origin. These stocks were estimated by indigenous personnel at about 6,000 tons. Mostly women were employed at large open boilers in other rooms, from which emanated a sickening odor as of rotten eggs. All workers, estimated [redacted] at 400, wore gas masks and protective clothing.

e. In another part of the plant some buildings are connected by pipelines 20 inches in diameter and laid 2 feet underground. This part of the plant could only be entered with special passes. In the vicinity of these buildings large amounts of only slightly covered stocks of sulphur were stored. An acrid smell of rotten eggs also filled the air in this section.

f. South of the chemical plant is a built-up site designated "margarine" plant. Dismantled German machines were stored inside and outside the buildings. These machines were being repaired by about 100 PWS.

g. For location see Annex 2.

February to November 1947

2. a. The BEKETOVKA Ammunition plant is $10\frac{1}{2}$ miles from STALINGRAD. Its production program also includes phosphor, sulphur, nitre, chloride of lime, and oxygen.

b. Mortar shells of different caliber as well as aircraft bombs were also filled.

c. For layout sketch see Annex 3.

May 1945 to December 1947

25X1

a. In the Chemical Plant in BEKETOVKA near STALINGRAD are two departments designated "Tsekh 2" and "Tsekh 207".

CENTRAL INTELLIGENCE AGENCY

b. Pump installations are in operation in a workshop of department 207. There are also eight 13-foot containers with unidentified corroding acids.

c. The production of department 2 (three workshops and one machine shop with 15 machine tools) included chloric gas.

d. For layout sketches see Annexes 4,5 and 6)

25X1 March 1946 to May 1947

4. a. A seven-story building of the ammunition plant in BEKETOVKA near STALINGRAD could only be entered with a special pass. When there was an operational disorder sweet and liquorice smelling gases escaped from this building and irritated eyes as well as respiratory and digestive organs. The physical disturbances did not last very long, passing fairly quick in fresh air. The workmen employed in this building wore Soviet army gas masks.

b. Soft, white stones coming by rail were processed in this building. The finished product was a white powder. Shipments of this product left in tarred cardboard barrels 30 inches high and 16 inches in diameter.

c. In addition to some new buildings, mechanical workshops, and storage depots, source remembers an installation of four workshops about 160 x 65 feet. From time to time defective containers 40 inches high and 30 inches in diameter and provided with a number of graphite electrodes were sent from these workshops to the welding shop for repair.

d. A number of other buildings seemed to be used for preparing and filling antitank and other artillery ammunition.

25X1 e. [REDACTED] the work force numbered 500 (20 percent women) per shift in a three-shift schedule, and 200 P.W.s working only an eight-hour shift.

f. For layout sketches see Annexes 7, 8 and 9.

25X1 March 1946 to January 1948

5. a. A chemical combine in the vicinity of the Stalgres Power Plant south of STALINGRAD consisted of six workshop buildings at the time of observation. Three of these buildings were new structures with the interior not completed. In one of these workshops several boilers about 16½ feet high and 10 feet in diameter were being established and a ramified system of pipes was being laid. In another workshop building two furnaces of undetermined use were being set up.

b. The following description of the plant installations was given:

(1) In a building of about 260 x 200 feet were two mills and two calcining furnaces as well as containers and pipe lines. A white greyish kind of stone was ground in the mills. The finished product has a yellowish and bluish color. This product as well as a number of other products of this plant were put into iron drums, steel cylinders, demijohns and boxes. The work force numbered 300 workers, 20 percent of whom were women and 10 percent P.W.s. Work was done in three shifts.

25X1

CENTRAL INTELLIGENCE AGENCY

25X1 b. In one department shells (in another department bombs also) were filled with a phosphorous substance. The filled shells were painted with a blue-grey color and packed into boxes after being gassed. [redacted] about 100 mm and 150 mm up to 170 mm shells.

25X1 c. One workshop building [redacted] had very large windows. At night many searchlights beamed through the windows into the interior of this workshop. There were many indications that inflammable material was processed here.

d. War gases were produced in another department. The Soviet workmen in this department wore thick rubber clothing, rubber boots and rubber gloves. Their heads were protected by gas masks covering the whole face. The gas was put into steel cylinders. About 800 cylinders were filled per shift. They were either put in stock or trucked away. Chloric gas, "green gas and tear gas" were produced and stored in a similar operation.

e. "Sulphur was burned and produced" in another department of the plant. This was done in furnaces 20 feet high and 6½ feet in diameter which were in continuous operation. These furnaces lasted, at best, three months. They were built of fireclay and loam.

f. Salt was processed in another department. Acids were produced in two other departments.

g. Tarred cardboard barrels were produced in a plant-owned barrel factory. One barrel held 35 kg of chloride of lime.

h. There were many steel and concrete underground bunkers within the plant area. The PWs could not learn the purpose of these bunkers.

25X1 i. For layout sketch see Annex 12.

JULY 1944 TO APRIL 1946

602 f 13. a. The Chemical Plant No 91 in BEKETOVKA near STALINGRAD covers about 10,000 x 3,000 feet including the adjacent power plant. According to source's estimate the work force numbered about 3,000 men.

b. There were 11 departments. Source remembers the chlorine, chloric gas, the phosphor and chemical warfare agent departments.

c. Phosphor stones, quartz stones and good coal shipments came by rail to one department where these materials were pulverized and made into a paste to which chemicals were added. This mixture, designated "phosphor", was sent through underground pipes to another workshop for further processing.

May 1945 to August 1948

25X1 14. a. The Plant No 91, like woodworking department No 20, operates for a large Chemical Combine in BEKETOVKA. The plant is in the vicinity of the Volga River at the STALINGRAD-TIKHORETSK railroad line.

b. There was a special department in the Plant No 91, producing chloride of lime and poison gases. In addition to an unknown number of Soviets, about 120 PWs were employed.

c. One department had about 100 boilers, 13 feet in diameter, used for some chemical treatment. There were frequent boiler explosions with fatal casualties.

d. The great salt consumption was noteworthy. Salt shipments came by

CENTRAL INTELLIGENCE AGENCY

water on the Volga River from ASTRAKHAN ($46^{\circ}21'N/48^{\circ}03'E$) and were unloaded by conveyor belts.

e. [redacted] the total work force of Plant No 91 at about 1,000 Soviets and 600 PWS.

f. Some of the chemical apparatuses were also of German make.

g. Department No 20 had a sawmill, a carpentry and a smithy. Work force: 70 to 100 Soviets and as many PWS. This department made wood work for Plant No 91.

25X1

25X1

February to August 1948

15. A. The Chemical Plant in BAKETOVKA south of STALINGRAD covers about 5,000 x 2,600 feet.

b. Power was supplied from adjacent STALINGRAD Power Plant. The chemical plant had its own steam boiler installation, fired with coal. Spur tracks existed.

c. The plant was subdivided into two main sections: One for the chemical production proper and another one where mostly old type artillery and mortar shells were disarmed, emptied, refurbished and newly filled.

25X1

d. [redacted] coal, limestone and large amounts of salt among the raw material shipments coming to the chemical section. Some of these shipments came by rail, but mostly by water on Volga River barges.

25X1

e. [redacted] work in the chlorine department;

Limestone and coal were mixed in a 3:1 ratio in a "stone mill" and pulverized. The mixture was then burned in a lime kiln installation which was always in operation. The kilns were about 40 feet high and 16 feet in diameter. The burned material was sent by a piping system through the entire department while passing through different production stages. Some of the apparatuses used were supplied with steam. The final product, chloride of lime (designated chloric powder in this department), was packed into cardboard barrels.

f. Phosphoric acid was produced in another department. A thick paste coming in tank cars with the inscription "AMMENDURF" was first unloaded into tin containers. The paste was heated in these containers and simultaneously watered. The contents of the paste precipitated into the liquid which was then conducted into earthenware containers of about 1 cubic meter volumetric capacity. It had a brown-yellow color. Compressed air was added during the production process while the escaping steam was conducted into a distillation installation. Samples of the product were continuously tested in the laboratory.

g. Chloric gas was put into steel cylinders, phosphoric acid into demijohns, and shipped.

h. A kind of "acid" smelling like bitter almonds was also produced in the plant. It crystallized if exposed to the air and it was very soluble in water.

25X1

CENTRAL INTELLIGENCE AGENCY

25X1 i. [redacted] had to dig out leaky underground iron containers about 15 feet high and about 10 feet in diameter. These containers were under subsoil water. The mass escaping during this excavation caught fire when exposed to the air. Burning stopped only when the container was again put under water.

25X1 j. Sulphuric acid was shipped in demijohns of 13.2 gallons volumetric capacity. In one department [redacted] bottles marked with rings on top and bottom. The contents of these bottles was a very heavy and viscous liquid allegedly inflammable. The bottles were not to be placed horizontally.

25X1 k. [redacted] estimates on production amounts. Two thousand barrels of chloride of lime were stored daily. The monthly phosphoric acid output was about 250 demijohns (each containing 125 kg.).

l. The total work force was roughly estimated at 1,500 to 2,000 Soviets and 500 to 600 PWs. A German chemist from AMMENDORF, von BOCK, was in the plant. He was mainly employed in the installation designated "margarine" plant.

m. The "margarine" plant, also part of the Plant No 91, was about 1,600 feet south of Plant No 91. At the time its buildings apparently served mainly for the storage of chemical machines, apparatuses, electro-motors and electrical installation material, machine tools and equipment for charging ammunition. Chinaware and other kitchen utensils were manufactured in one building.

n. For layout sketches see Annexes 13 and 14.

25X1 February 1946 to August 1946

16. a. The Chemical Plant in BEKETOVKA consists of eight departments. Chemical warfare agents were produced. The plant installations were not destroyed in wartime and there was only a little damage by artillery and bombs. The installation was evacuated but has been returned and reinstalled.

25X1 b. Part of the plant installations came from an Upper Silesian Plant [redacted]

c. During an experimental operation of a large blowing engine, gases escaped which source designated "blue cross fumes". (Sternutators?)

d. In the plant phosphorus was observed being unloaded from German tank cars.

e. Chlorine was produced in one building. As great amounts of this gas escaped during the production process, a disagreeable smell filled the air around the plant.

25X1 f. Large amounts of ammunition were stored in the plant area, apparently waiting to be filled. This was said to be incendiary and gas ammunition. [redacted] a great amount of stored bottles contained chemical warfare agents. A PW suffered from a serious vesicant contamination (Yellow Cross contamination) when using the oily liquid of one of these bottles for greasing his boots.

g. Piles of thousands of containers with chloride of lime and piles of normal-looking oxygen steel cylinders were observed.

h. One department designated "acid installation" had large steel pressure chambers and other containers with acid-proof lining placed on acid-proof

CENTRAL INTELLIGENCE AGENCY

3
fundaments. Walled channels were cemented with acid-proof putty.

- 3*
i. The plant had a cooling installation operated on the ammonia compression system.

25X1 May 1945 to August 1948

17. a. The Chemical Plant No 91 in BEKETOVKA, still under construction, covered about 1 x 1 square miles including its old production site.
- J* b. The chlorine department consisted of the following buildings: Several machine shops, a warehouse, the chlorine production department itself consisting of a large building with a silo-shaped tower and one furnace (in operation), a building designated by source "salt production building", and a recently built house.
- S* c. Poison gases were produced in one department. Yellow, sulphur-smelling fumes developed during production.
- D* d. There was also an installation for filling gas shells.
- S* e. A new installation was under construction about 1,600 feet south of the main plant. It will be a hydrogenation plant for gasoline synthesis and a carbide production plant. Operation had not started in February 1949.
- T* f. The labor force working in three shifts numbered about 3,000 civilians, 30 percent of them women. Four to five hundred PWs did reconstruction work. Workmen wore protective clothing and gas masks in the chlorine and salt department, as well as in the shell filling department and poison gas department.
- G* g. The conscripted Professor Dr. von Brock, formerly of the I. G. Farben Plant, supervised the construction of the new installation.
- J* h. The entire plant area was strictly guarded and the plant departments are strictly separated.
- V* i. The plant with the cover name "margarine" had a number of large and middle-sized workshop buildings and served for the storage of dismantled German plant installations. All the installations of the dismantled SAALFELD Plant of the Goldschmidt Corporation were moved, in several shipments, to this place by the fall of 1946.
- j. For layout sketch see Annex 15.

25X1 July and August 1948

- P* 18. a. The Chemical Plant in BEKETOVKA is apparently an old enterprise but a large number of new installations have been put into operation.

25X1

- V* b. [redacted] the chloride of lime department [redacted] had an about 80-foot high tower and an installation equipped with pumps and earthenware containers which was a filtering plant according to information from indigenous personnel. Most apparatuses of the department were of German make and came from a firm in SAALFELD. This department was not yet in operation.

25X1

CENTRAL INTELLIGENCE AGENCY

25X1

c. In addition to several buildings [redacted] there was an installation for filling oxygen, an underground bunker where shells were cleaned and greased as well as administration warehouse buildings.

25X1

d. [redacted] incoming shipments: Large amounts of salty; numerous boxes containing steel cylinders (these shipments had to be taken immediately from airplanes landing on the GUMRAK Airfield) and allegedly phosphorus arriving in German tank cars.

25X1

e. For layout sketch see Annex 16.

25X1 May 1946 to August 1948

19. a. Among chemicals processed in the Chemical Plant No 91 in BEKETOVKA source especially noted a liquid with a pungent smell coming into the plant in earthenware containers.

b. Soap was produced in a secondary department of the plant.

c. Tubes with bottle-shaped electrodes suspended on wires were in an electrolytic department. Power was supplied through a transformer station.

d. A [redacted] liquid was used in one department. It apparently consisted of an ether-alcohol mixture.

25X1 [redacted] Comment:

1. Location:

BEKETOVKA ($48^{\circ}34'N/49^{\circ}02'E$) is located $10\frac{1}{2}$ miles southeast of STALINGRAD. The area of the Chemical Plant starts in the town center and extends between the STALINGRAD-KRASNOARMEISK ($48^{\circ}31'N/44^{\circ}32'E$) railroad line and the Volga River for about 1 mile to the southeast. The STALINGRAD large-scale power station "Stalgres" is opposite the northwestern corner of the chemical plant, separated from the latter by the railroad line.

2. Plant history:

The Chemical Plant No 91 in BEKETOVKA existed before the war. The most important installations were evacuated during the war, but were returned and re-installed shortly after hostilities ended in the STALINGRAD region. The buildings of the plant were scarcely damaged in the war while the adjacent power plant apparently had to be completely reconstructed. However, the largest and most important part of the plant installations was not set up until after the war and then by using dismantled German apparatuses.

3. Plant installations:

This report does not furnish a distinct picture on the plant installations or production. However, by comparing the different observations, conclusions could be drawn which may give a correct conjecture of the main points of the BEKETOVKA production program. Although the plant consists of a number of very different production branches, chlorine alkali electrolysis must be considered the basis of the entire enterprise. This electrolysis serves principally for the production of chloric gas which is further processed in a number of installations. Many by-products are produced by the electrolysis itself as well as in the subsequent operations. The D.C. current of low voltage and high amperage required for the electrolysis

25X1

CENTRAL INTELLIGENCE AGENCY

is supplied by the Stalgres Power Plant through a transformer and rectifier station.

It is very probable that sodium sulphite is also produced electrolytically in the same plant.

Another large installation of the plant is the chloride of lime department with its lime kiln batteries and extensive apparatuses.

Prewar production was the production of ultramarine, an inorganic blue pigment, widely used for manufacturing printing and painting colors for dyeing paper material, building materials, linoleum, etc. The equipment for this production includes crushers, mills, kilns and various appliances for washing and dressing the material.

Although no details are available, it is certain that sulphuric acid is produced in BEKETOVKA. An installation for the production of hydrochloric acid may also exist as a side line of the salt-processing department.

The repeatedly reported extensive installations with containers, pipe system and other equipment, as well as the production of chemical warfare agents observed by many sources, are certain indications of the existence of a large-scale production of industrial and war gases as well as other chemical warfare agents. The cooling plant operated by the ammonia compression method is doubtlessly part of this production setup.

It is also certain that the plant has various apparatuses for the treatment or production of phosphorus and phosphoric acid.

In addition to these departments there certainly are many other plant installations which are not recorded and where other chemical agents are produced.

Independent installations within the chemical plant are those workshops where old-type mortar and artillery ammunition as well as aircraft bombs are disarmed, cleaned and refurbished to be refilled with chemical charges and igniting charges and partly with propellant charges also.

Incoming shipments of raw materials arrive by water and are unloaded at plant-owned harbor installations. Transportation is continued by rail on a ramified network of sidings and spur tracks of the plant. Transportation within the plant is done on standard gauge railroad cars and unloading by conveyor belts and elevators.

4. Production:

The production of chlorine is determined. The shape of the cells used for the electrolysis is shown in a schematic sketch on Annex 9. The interior surface of the iron container itself is the cathode while the electrodes of ferrous oxide or a similar substance are the anodes. It was erroneously reported in para 4 that the electrodes consisted of graphite. The cells are filled with a salt solution. During the electrolytic cleavage chlorine and oxygen develop as anode gas while the cathode residue contains sodium and potassium hydroxide (caustic soda and caustic potash) and magnesium compounds. The gases are separated and compressed and put into steel cylinders or - mainly chloric gas - processed into other products.

The chloric gas is used especially for the production of chloride of lime. Crushed limestone is burned with coke in one or two cupola furnaces which are in continuous operation. Air is artificially supplied. The limestone is then slaked in drums with steam and water and later is chlorinated in a number of large containers. During a long production process

CENTRAL INTELLIGENCE AGENCY

the material is dried in containers lined with heating coils and crushed in edge mills. These mills consist of a spherical tub, open on top, in which two vertical millstones rotate around an axis and crush the brittle material.

Chloric gas is certainly also used in BEKETOVKA for the production of phosgene or diphosgene ("Green Cross"). This may not only be inferred from the rotten fruit odor but also by the fact that ethyl alcohol, which is potable in diluted form, is being processed. This product is an important basic material for the production of "Green Cross" or "Perstoff". Probably chlor acetone and chlor acetophenone are also produced by using chloric gas. These products have a strikingly pungent odor. The first is used as lung-poisoning gas or an irritant and the second predominantly as vesicant.

By allowing chloride of lime to react on picric acid, chloropicrin is produced. It has long been used in the Soviet Union on a large scale as a filling for shells with 50 percent sulphuric chloride. There is no doubt that sulphuryl chloride is manufactured in BEKETOVKA.

It is possible that perchloromethylmercaptan (SCCl_4), the equivalent of the French "clairsite", is also produced in the plant. It is an irritant gas and has a repulsive odor. It is produced by allowing carbon bisulphide to react on chloride. The BEKETOVKA Plant produced carbon bisulphide in prewar time. The respective production installations have been enlarged by using dismantled German apparatuses.

There is also evidence that mustard gas or yperite is produced. It is a gas smelling of leek, horse-radish or mustard. The required basic materials are available in the plant. This production started before the war and very recent reports confirm this production to have been resumed. The production of "Adamsit" (chlorvinyl dichlorarsin) is not quite determined. There are some indications of this, however, such as the odor of flowers, the processing of hydrochloric acid while using refrigerating methods, and the oily consistency of the chemical warfare agent.

Wartime information as well as very recent information on the alleged production of "Clark I and II" (blue cross gas (sternutators)) is not confirmed. The procedures and production processes used in BEKETOVKA are completely different from those used in blue-cross gas production. This production would also be extremely complicated. It must be assumed that such chemical warfare agents will more likely be produced in plants where basic materials required for blue-cross gas production are processed or manufactured.

The production of xylic bromide is possible but not shown. This is a powerful lilac-smelling irritant. The only indication for such a production would be the processing of tar. Tar is not used in the production of xylic bromide but the most important primary product of xylic bromide is xylene (in addition to bromine), which can be mistaken for tar due to its viscous consistency and its color in a raw condition.

There is no factual proof for the production of phosphorus in BEKETOVKA as indicated in some reports. It is much more probable that an intermediate product originating from other factories is shipped to BEKETOVKA as raw phosphorus mass in tank cars and is redistilled into pure white phosphorus in special installations. It may be possible that the primary phosphorus production will be started to simplify the production process.

It is very probable that calcined soda is produced as a by-product during the salt analysis and is preferably used for the ultramarine production.

CENTRAL INTELLIGENCE AGENCY

In addition to soda, sodium sulphate and large quantities of charcoal, and especially kaolin, sulphur and quartz are processed in the ultramarine department. These materials are first crushed in crushing plants and pulverized in mills. They are then burned in 20-foot high kilns. Flintstones containing almost 100 percent silicic acid are used as quartz and also as flints, according to one source. The frequently stated sulphuric smell in the plant area may have come from the ultramarine department or from a plant where carbon bisulphide is produced by burning elementary sulphur and conducting the gases over glowing charcoal.

It is very probable that picric acid and phosphoric acid are also produced in the plant.

The above mentioned products represent the main production of the BEKETOVKA Chemical Plant. Various compounds are produced as by-products. They are processed on the spot or are sent to other plants for processing. The production of washing agents may be given as an example. Caustic alkali produced during the salt electrolysis as well as soda are processed as basic materials for the production of washing agents.

The work in the ammunition department consists mainly in filling shells and aircraft bombs with phosphorus and sulphur-containing incendiary charges as well as mortar shells with phosphorus-containing propellant charges.

It appears that the plant will be considerably enlarged. The reported establishment of a calcium carbide production department and a gasoline synthesis south of the plant is a very characteristic detail. Acetylene alone, which is produced from calcium carbide, can yield various chemical warfare agents, but many other chemical products also. An important factor for the further development of the plant is the supply and present storage of apparatuses of German make in the "margarine" subsidiary plant. Although slightly erroneous, the statements leave no doubt that these installations came from the plant of the T.H.Goldschmidt Corporation in AMMENDORF, Salle District, in Thuringia. The production program of this plant was for the following chemicals: caustic potash, caustic soda, liquid chloric gas, chloride of lime, chlorinated rubber, sulphur chloride, ferric chloride, calcined soda, soda crystals, sodium compounds, sulphuryl chloride, carbon tetrachloride and compressed hydrogen.

There is no doubt that these dismantled German installations will be put into operation in BEKETOVKA as fast as possible. The urgency is indicated by the enlistment of the chemist, Dr. von BOCK, formerly employed in the AMMENDORF Plant, who is to supervise the building operations. The information is not sufficient for a capacity estimate of the various productions. Not even the proportionate sequence of products can be indicated. It is certain that considerable amounts of chloric gas and chloride of lime are being produced. The monthly output of phosphoric acid may be about 30 tons, the monthly output of yellow phosphorus about 60 tons.

5. Raw materials:

Little is known on the origin of the raw materials processed in BEKETOVKA. Raw material shipments can come from remote parts of the country due to the favorable traffic position of the plant. There are no raw material sources in the nearby surroundings except salt. The salt produced in the nearby Elton and Baskunchak Lakes consists of sodium and potassium chlorides and sulphates and magnesium compounds. Salt shipments go by rail to the harbor of VLADIMIROVKA ($48^{\circ}18'N$ $45^{\circ}10'E$) and then by Volga River barges to BEKETOVKA. The distance from the Elton Lake to VLADIMIROVKA is 100 miles, from the VERKHNI-BASKUNCHAK ($48^{\circ}14'N$ $46^{\circ}44'E$) railroad station to VLADIMIROVKA 37 miles. It is known that the salt production

What raw materials to make these products

CENTRAL INTELLIGENCE AGENCY

at the Baskunchak Lake was recently pushed due to the BEKETOVKA Plant expansion.

6. The indications of the work force of the chemical plant vary considerably. It can be estimated to be at least 3,000. At present about 40 percent of the work force may be women.

The existing significance of the Chemical Plant No 91 in BEKETOVKA will increase considerably as soon as the expansion projects are realized. Vulnerable installations of the plant are the chloric alkali electrolysis, the gas-processing departments and especially the power plant. A lasting breakdown of the power plant would completely paralyze the operation of the chemical departments.

25X1

25X1

CENTRAL INTELLIGENCE AGENCY

Chemical Plant in BUKOVKA

(See Annex,1, para 4)

Legend to Annex:

- 1 Guard house
- 2 Messhall
- 3 Workshop for dressing ammunition (260 x 65 x 30 feet)
- 4 Depot of building materials
- 5 Warehouse
- 6 Latheshops (probably for tooling shells)
- 7 Four workshop buildings (can only be entered with special pass, entrance to PWs prohibited)
- 8 New building (330 x 65 x 40 feet)
- 9 Latheshop and milling shop (330 x 65 x 40 feet), entrance prohibited to PWs
- 10 Mechanical workshop (330 x 65 x 40 feet), production of bolts 300 mm long and 30 mm in diameter.
- 11 Packing material for chloride of lime
- 12 Probably production of chloride of lime
- 13 Conveyor belt
- 14 Storage sheds for chloride of lime (330 x 30 x 15feet) with loading ramp
- 15 New buildings (excavated fundaments 120 x 30 feet, use unknown)
- 16 Tar stored in wooden sheds (13 x 20 x 13 feet)
- 17 Administration building (stone building 160 x 16 x 13 feet)
- 18 Living quarters of guards.

25X1

CENTRAL INTELLIGENCE AGENCY

Plant No 91 in BEKETOVKA (See Annex 1, para 12)

Legend to Annex:

- 1 Messhall
- 2 Gas tank
- 3 Department for mustard gas production (department 1)
- 4 Processing of phosphorus and ammunition (department 3)
- 5 and 6 Production of acids
- 7 Processing of salt
- 8 Depot of gas bottles
- 9 Filling of gas bottles
- 10 Chemical workshop, production unknown
- 11 Chlorine production
- 12 Workshop, production unknown
- 13 Power station
- 14 Department 4a, production unknown
- 15 Production of electrical instruments
- 16 Dressing of shells
- 17 Workshop, production unknown
- 18 Living quarters of guards
- 19 Processing of phosphorus and ammunition (department 3a)
- 20 Salt depot
- 21 Production of barrels for chloride of lime (department 13)
- 22 Department 11, burning of sulphur
- 23 Department 5, processing of chlorine
- 24 Department 9, unknown production
- 25 Depot
- 26 and 27 Workshops, production unknown
- 28 Department 22, production unknown
- 29 Searchlight installation for department 22.

25X1

25X1 (2) [redacted] production in another building, about 330 x 200 feet. The following materials were processed: Six 20-ton carloads of charcoal daily as well as sulphur packed in boxes and an unidentified material also packed in boxes. Source estimated the total work force at 300 men and 300 women working in three shifts.

(3) In two other departments shells were finished, examined with test instruments and apparently also filled. Finishing of the ammunition was done by about 400 workers, 30 percent women and 15 percent PWs. About 300 workers, about 20 percent women and 20 percent PWs, were employed in the testing and filling department.

25X1

Up to November 1947

6. a. Two or three daily 20-ton carloads of artillery shells (105 and 172mm caliber) came into some departments of the Chemical and Ammunition plant south of BEKETOVKA near STALINGRAD for preparatory treatment (merustin and oiling). Source did not know the further treatment of this ammunition. It was packed in boxes which were piled in a depot.

b. In one section of the chemical plant proper, white, grey, and black-spotted stones were broken, crushed in stone mills and mixed with a powdery material. In the vicinity of the plant these raw materials were transferred from Volga river barges into 20-ton railroad cars and then shipped by rail to the plant.

(1) The stones were crushed to about walnut size, 25 kg of coke was added to 100 kg of stones, and this mixture burnt in two furnaces about 20 to 25 feet high and 13 to 16 feet in diameter. Only one furnace seemed to be in operation at a time. The burnt material dropped into 10 reservoirs each about 33 feet long, underneath the furnaces. This material was then put into tarred cardboard containers 30 inches high and about 12 inches in diameter. The finished product looked like white powder. The workmen wore old army gas masks while the PWs protected nose and ears by cotton pads.

c. There were also an administration building, several wooden cantonment buildings of undetermined use, storage depots for charcoal and flowers of sulphur as well as a stone building where oxygen bottles were filled.

d. South of the chemical plant is an enterprise designated "margarine" plant with several workshop buildings. Large amounts of German and Soviet aircraft bombs were stored in some of these buildings. In other workshops source observed apparatuses coming from the Chemical Plant in AMMENDORF (Saxony) (presumably AMMENDORF M 52/D 92) and the I.G.Farben Plant (electrical machinery). German instruments and measuring instruments of the firm Hartmann & Braun in FRANKFURT/Main (L 51/M 67) were stored in other buildings.

e. [redacted] the total work force to be 800 workers per shift, about 20 percent PWs.

f. For layout sketch see Annex 10.

25X1

7. 1945 to 1947

a. In an installation of the Chemical and Ammunition Plant in BEKETOVKA not far from the STALINGRAD Power Plant, chloride of lime and "sulphur and tar" (according to designation of source) is produced. An iron foundry is in the vicinity of this installation. In some warehouses and in the open 105mm shells as well as Soviet and German 250 kg bombs were stored.

b. The manufacturing of ammunition itself was done in a special department where PWs inserted fuses in shells and shells were lacquered, greased and packed in boxes. Two 105mm shells were packed in one box.

CENTRAL INTELLIGENCE AGENCY

25X1

- 25X1 c. Spur tracks go from all parts of the plant area to the main railroad line.

November 1947 to June 1948

8. a. All kinds of chemical warfare agents were produced in one "tsekh" of the plant in BEKETOVKA near STALINGRAD. The chemicals used in the production process had a strong smell of mustard and flowers. This odor also filled the air around the plant. Protective clothing and rubber gloves did not adequately protect the skin. The transportation of a chlorine mixture stored in large amounts in silos was especially dangerous. Protective masks could not prevent inflammation of the eyes. The workers employed in this department got special food.

b. The "chemical warfare agents" were filled into steel cylinders. PWs loaded these cylinders into special railroad cars.

- 25X1 c. Despite milk allocations and good food many PWs became sick due to skin and eye affections.

July 1944 to July 1948

9. a. In an installation of the Chemical Plant No 91 in BEKETOVKA southeast of STALINGRAD, a mixture of limestone and coke (ratio 3:1) was burnt in three furnaces 30 to 45 feet high and about 20 feet in diameter. This material was previously crushed in the mills. The burned material was carried by screw conveyors to the 9th floor of the building where it went into two large wooden troughs. From there it descended from story to story passing through a series of processing stages [redacted]

25X1

25X1 [redacted] A biting odor of chlorine was everywhere. The material was crushed by specially arranged millstones on the 8th floor. An installation of drying containers heated by a steam pipe system was on the 7th floor. The produced chloride of lime was put into tarred cardboard barrels.

b. At the time of observation 300 to 400 cardboard barrels were filled per shift.

c. Fellow PWs said that a liquid of brown-yellow color was put into steel cylinders in another building. An acid unidentified by source was also produced in this building.

d. Large amounts of salt were processed in a new workshop building. The salt arrived by water and was moved to the plant on underground conveyor belts.

e. Machines and boiler-shaped containers were being installed in another new workshop building. At the western side and outside of this building were seven wooden tubs, 16 to 20 feet high and 16 to 20 feet in diameter, the contents of which source designated as "hydrochloric acid".

25X1

CENTRAL INTELLIGENCE AGENCY

f. The fenced-in department No 19 is in the northern section of the plant. A pungent almond-like smell hovered in the air near this place.

g. Various warehouses and workshop buildings inside and outside the plant area could not accurately be described. One of these buildings was a soda factory. A plastic pipe system was in another building.

25X1 h. For layout sketches see Annex 11.

1945 to June 1948

10. a. The Chemical and Ammunition Plant, separated from the Stalgres Power Plant only by a double-track railroad line, is south of STALINGRAD, about 300 feet from the Volga River bank.

b. Old mortar and artillery shells were disarmed and emptied in the ammunition department. The shells were then protected against corrosion by a paraffin coating. These projectiles were later polished on lathes and - at least in some departments - were filled with a phosphorous substance by means of special weighing and filling apparatuses. The projectiles were also provided with new fuses and the mortar ammunition was loaded with new propellant charges. Source saw mostly 76.2 mm and 128 mm mortar ammunition. However, there were also projectiles with smaller caliber.

c. Chlorine was processed in a department designated "V". Sulphur and phosphor was processed in the department XI.

d. Chloride of lime was also produced from chlorine. Sulphur and phosphor were ground in mills and at least part of this material was further processed in the plant.

e. Large earthenware bottles, similar to acid containers, were used for the transportation of some chemicals.

f. The PWs believed that chemical warfare agents, at least chemical defense agents, were produced in this plant.

25X1

May 1945 to July 1948

11. a. [REDACTED] the chemical plant south of STALINGRAD covered an area of about 3,300 x 1,600 feet, and its work force numbered 1,500 to 2,000 civilians and 300 to 400 PWs working in three shifts.

25X1

b. [REDACTED] the entire plant has underground installations.

c. Much salt and soda were processed in the plant. Daily shipments of large quantities of these products were unloaded and stored at dumps.

d. An odor as of rotten apples or somewhat sweetish smell as of violets spread over the whole area. [REDACTED] cigarettes did not have a taste after having breathed this smell.

25X1

e. All workmen work with gas masks but still look sick. On entering, the workmen have to leave behind cigarettes, tobacco and matches.

25X1

February 1947 to August 1948

12. a. The Chemical Plant No 91 in BEKETOVKA near STALINGRAD is subdivided into about 29 different departments. According to a rough estimate, the work force numbered about 1,500 in each of the three shifts.

A

swan

25X1

CONTROLLED DISTRIBUTION

Annex 14

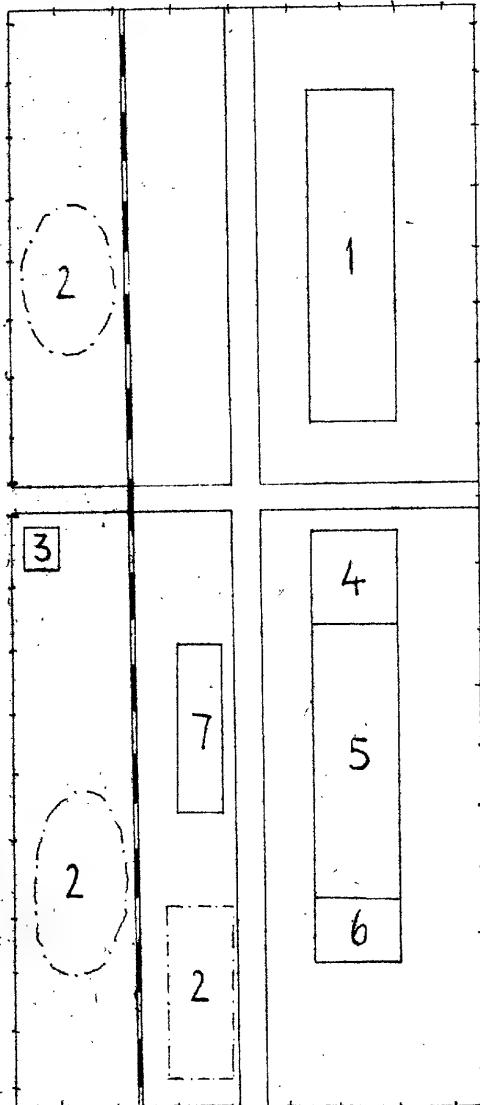
25X1

"Margarine" Plant in BEKETOVKA

(see Annex 1, par. 15)

→ to STALINGRAD ←

→ to KRAZNOARMEYSK ←



Legend:

- 1 Depot for electric instruments as well as workshop for filling shells (six to ten shell-filling machines and machine tools)
- 2 Storage place for machines, containers and pipes (including silver pipes)
- 3 Sentry box
- 4 Depot for oil, fat and sheet metal
- 5 Warehouse, stored material included small engines and valves
- 6 Mechanical workshop
- 7 Factory for porcelain and kitchen ware

not to scale

CENTRAL INTELLIGENCE AGENCY

~~CONTROLLED DISTRIBUTION~~

Annex 2

25X1

Chemical and Ammunition Plant in BEKETOVKA near STALINGRAD

(see Annex 1, par. 1)

Return to CIA Library

Legends:

- A "Stalgres" Power Plant
 - 1 Workshop building
 - 2 Coal bunker
 - B Chemical Combine No. 91
 - 1 Department I,
production unknown
 - 2 Department VIII,
production unknown
 - 3a Chlorine factory
 - 3b Repairshop
 - 4a New building
(department 4)
 - 4b Material depot
 - 4c Administration building
 - 5 Electromotor department
 - 6 Garages
 - 7 Chemical production
departments
 - 8 Station of the fire
brigade
 - 9 Carpentry
 - C Production or repair of
electromotors
 - D "Lessorama" Sawmill
 - E Shoe factory (probably
protective shoes)
 - F "Margarine" Plant
 - 1 Depot
 - 2 Administration
 - 3 Workshop

not to scale

CONTROLLED DISTRIBUTION

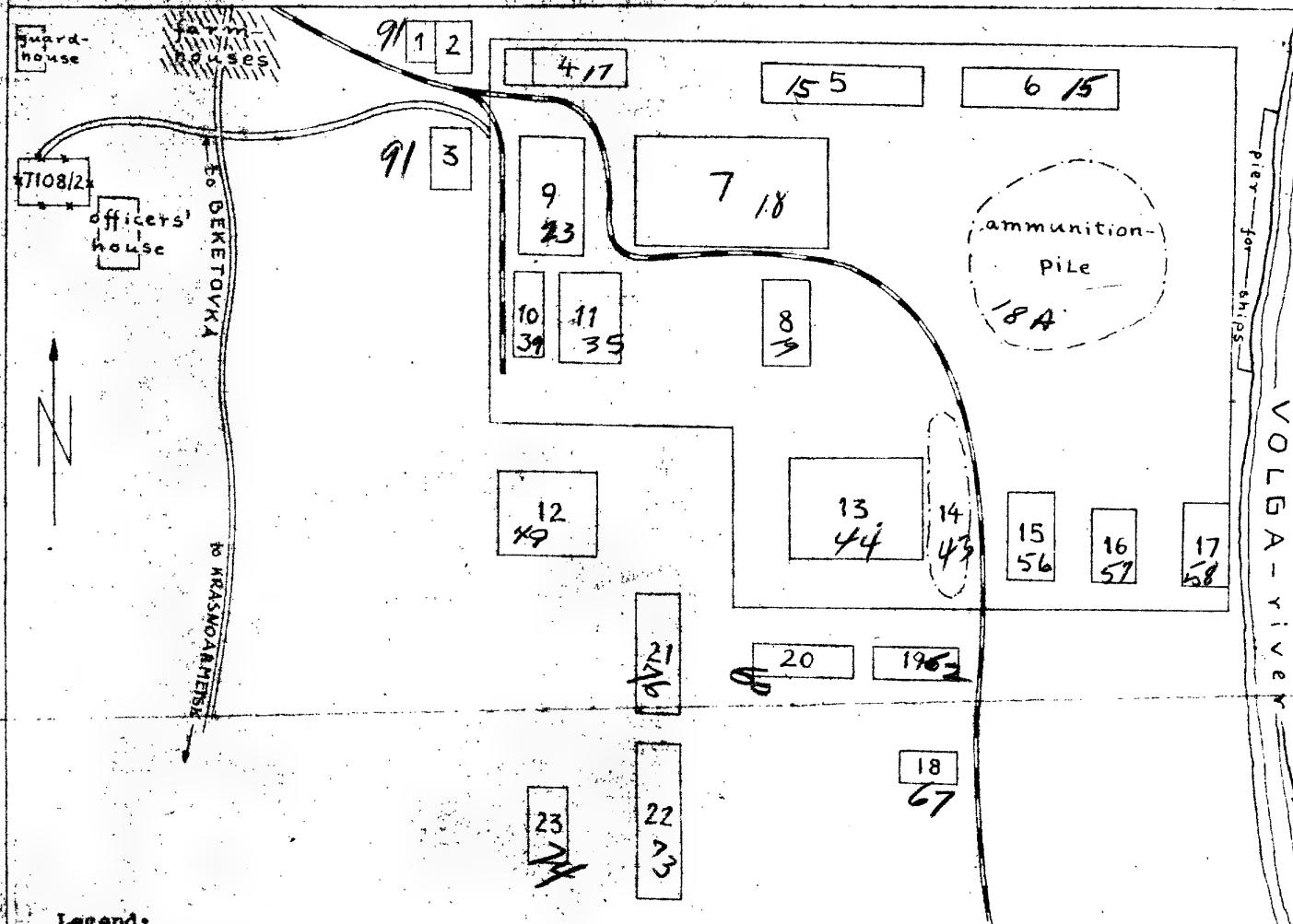
Approved For Release 2004/07/29 : CIA RDP82-00457R004400600004-0
CENTRAL INTELLIGENCE AGENCY Annex 3 : 25X1

23A1

4-0
25X1

Chemical Plant No. 91 in BEKETOVA

(see Annex 1, par. 2)



Louisiana

- | | | | |
|----|---|----|-----------------------------|
| 1 | <u>Iron foundry</u> | 12 | New building |
| 2 | Holler house and furnace battery | 13 | Production of phosphorus |
| 3 | Coal bunker | 14 | Site for filling bombs |
| 4 | Administration building with guard house | 15 | Processing of sulphur |
| 5 | Oxygen production | 16 | Sulphur depot |
| 6 | Filling station for gas steel cylinders
(and depot of steel cylinders) | 17 | Saltpetre depot |
| 7 | Processing of ammunition | 18 | Sawmill |
| 8 | Ammunition depot | 19 | Garages |
| 9 | Workshop building, production unknown | 20 | Mechanical workshop |
| 10 | Depot of chlorine and of chloride of lime | 21 | Station of the fire brigade |
| 11 | Production of chlorine and of chloride of lime | 22 | Food and clothing depot |
| | | 23 | Food depot |

not to scale

25X1

Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

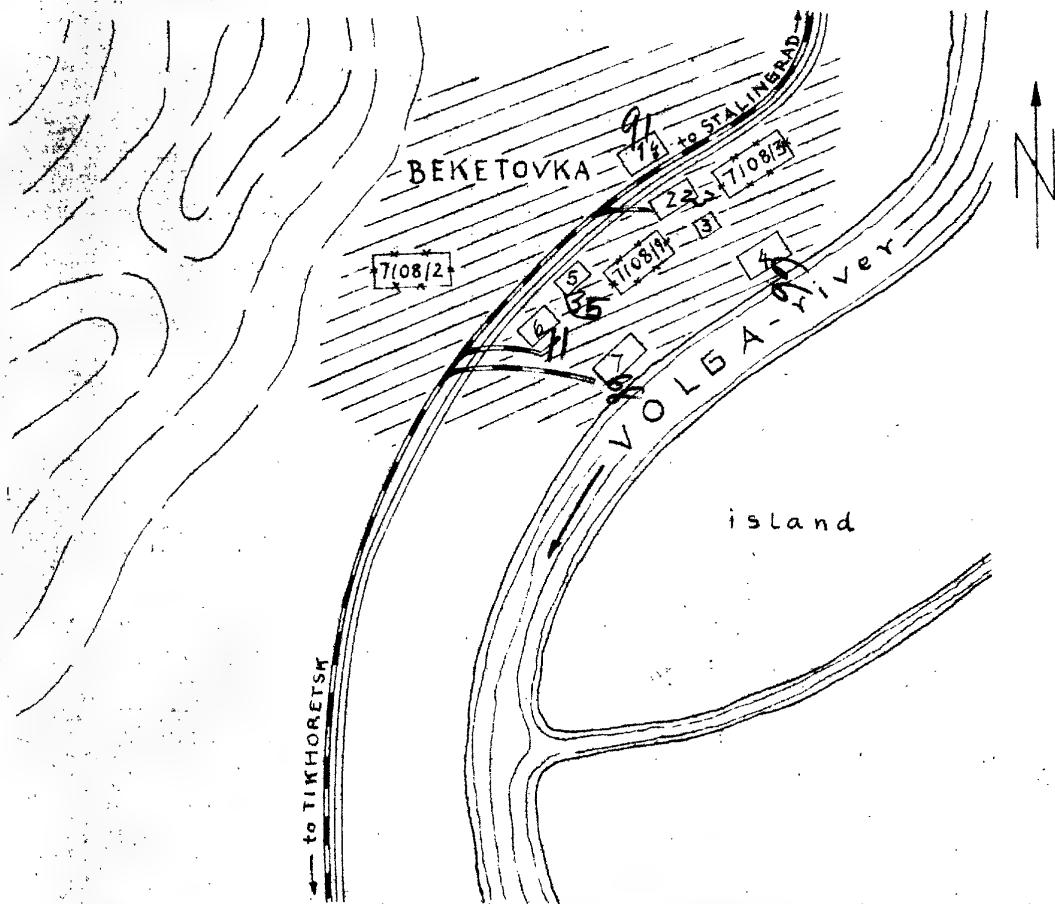
CENTRAL INTELLIGENCE AGENCY

CONTROLLED DISTRIBUTION

Annex 4 25X1

(see Annex 1, par. 3)

Area around the BEKETOVKA Chemical Plant



Legend:

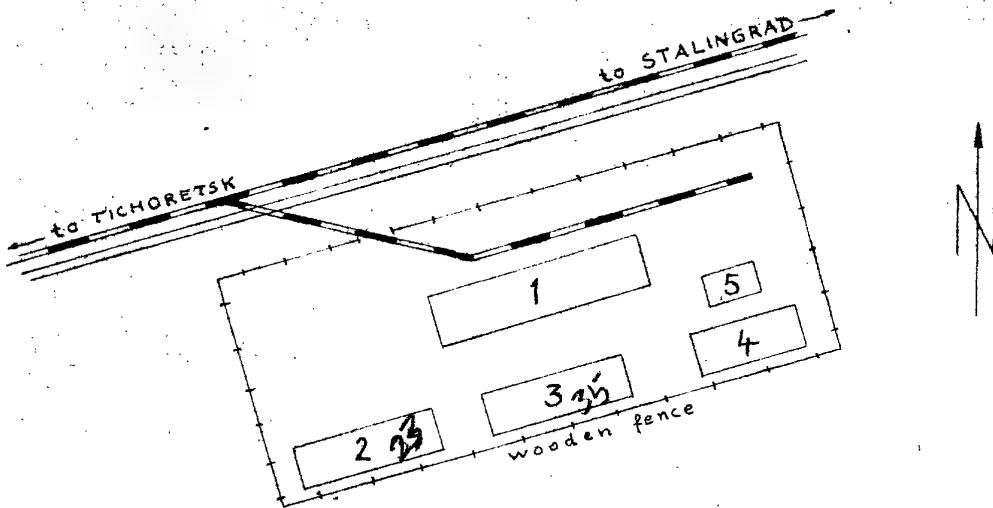
- 1 Power Plant with long distance heating installation
- 2 Chemical Plant, department 2, production of chlorine
- 3 Department 9 (production of electric switchboards)
- 4 "Volga" timber yard with pier
- 5 Lime works
- 6 Production of slag concrete
- 7 Department 207

Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

25X1

Plant Department 2 in BEKETOVKA

(see Annex 1, par. 3)



Legend:

- 1 Depot of building materials and machine shop
- 2 Probably production of chlorine
- 3 Probably depot of chloride of lime
- 4 Production unknown
- 5 Pump station

25X1

SECRET

Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

25X1

CONTROLLED DISTRIBUTION

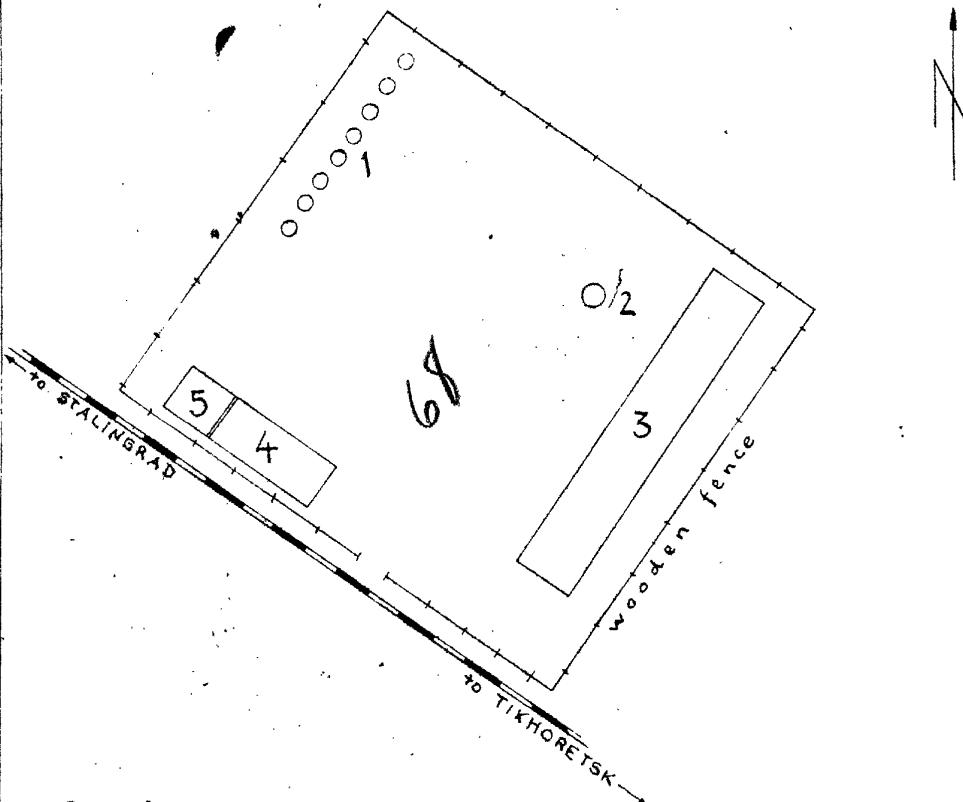
Annex 6

CENTRAL INTELLIGENCE AGENCY

25X1

Plant Department 207 in BEKETOVKA

(see Annex 1, par. 3)



Legend:

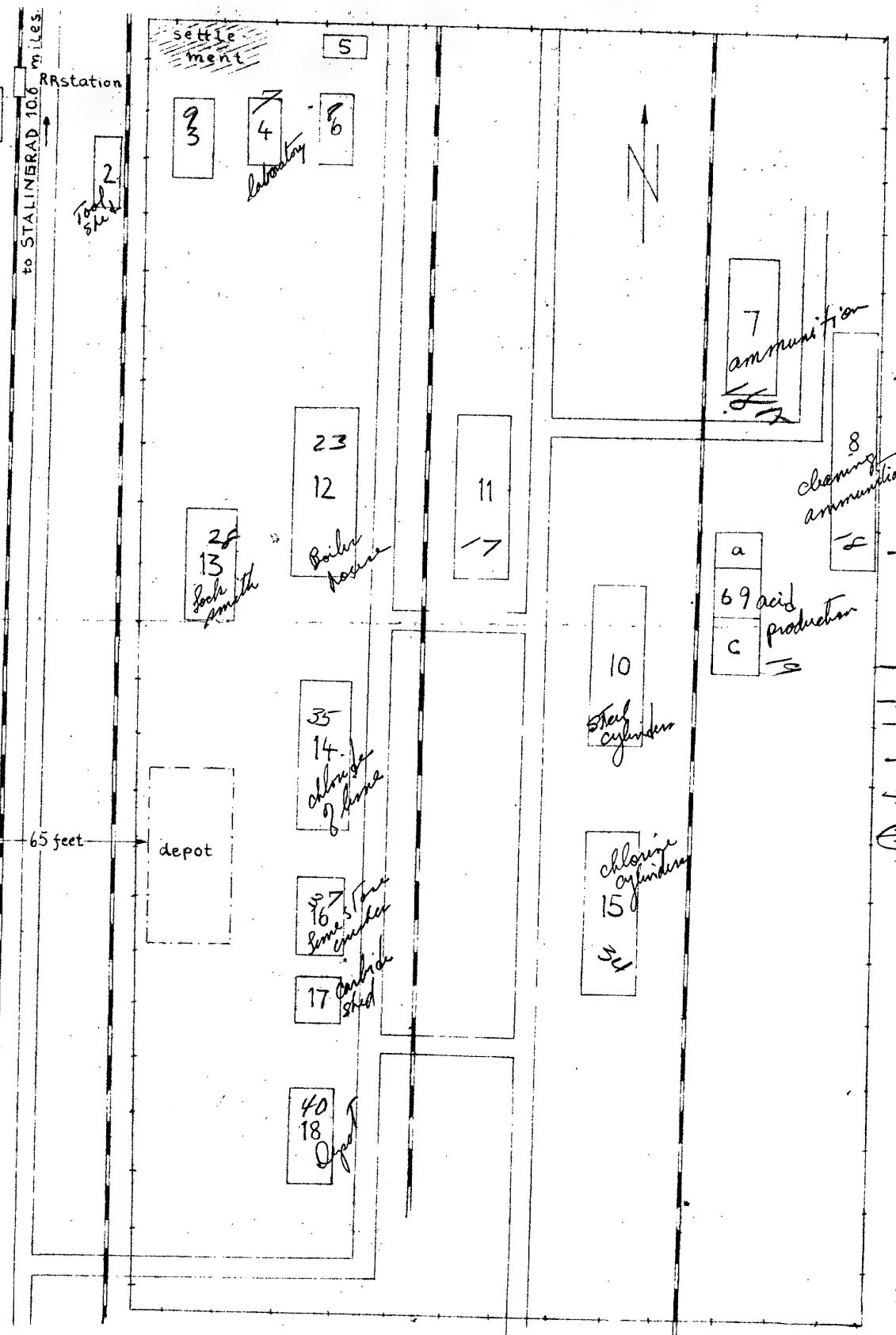
- 1 Acid containers (iron), each 13 feet high
- 2 Smoke stack, about 330 feet high
- 3 Workshop building
- 4 Administration building
- 5 Use unknown

CONTROLLED DISTRIBUTION

Museo 13

25X1

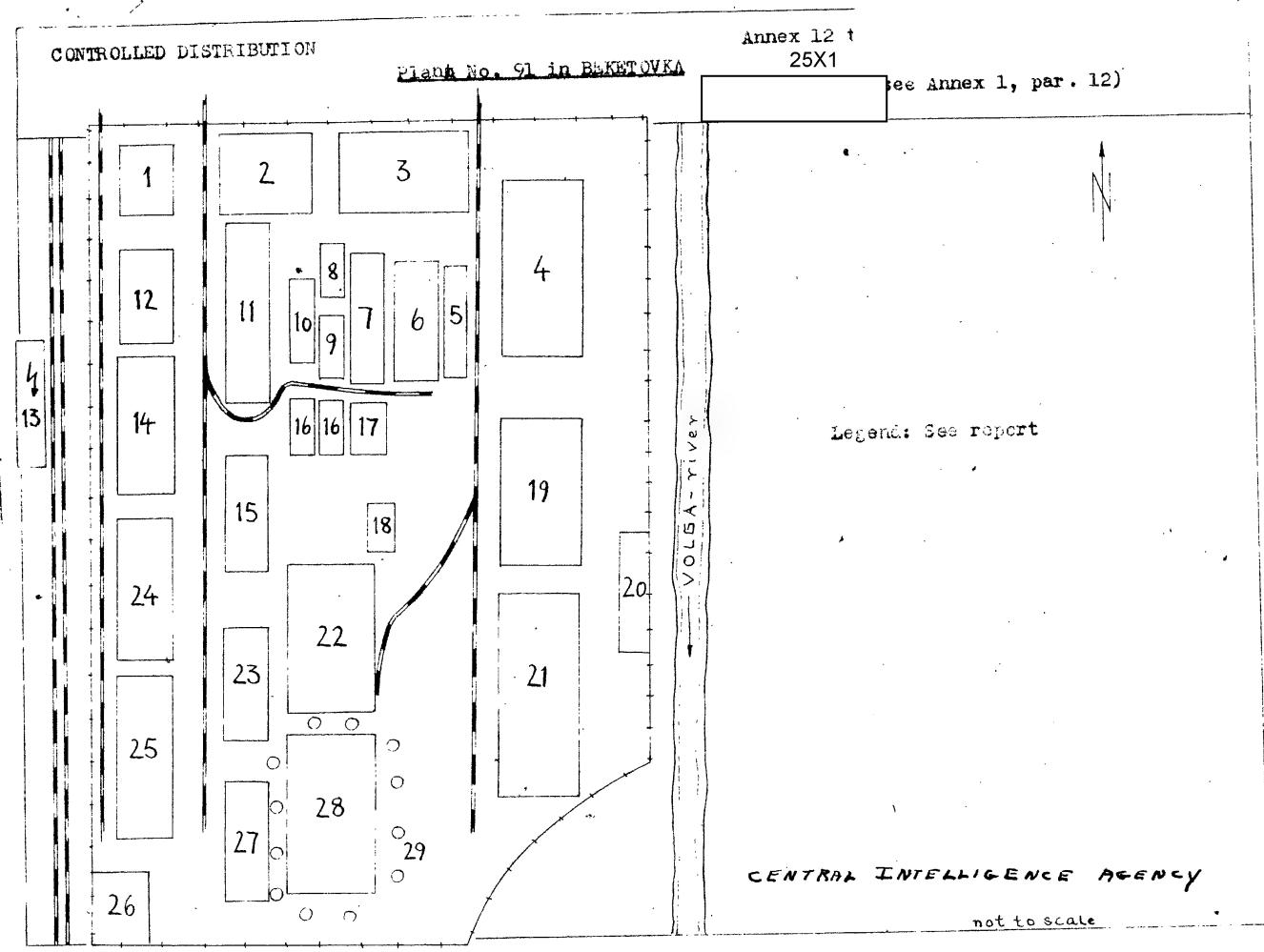
(see Annex 1, par. 15)



Legend:

- 1 Power station
 - 2 Tool shed
 - 3 Department 2,
production unknown
 - 4 Laboratory
 - 5 Messhall
 - 6 Department 1,
production unknown
 - 7 Ammunition shed
(for 70,000 rounds of
ammunition - 76.2 mm, 12
and 152 mm caliber)
 - 8 Workshop for cleaning
old ammunition
 - 9 Acid production (330x30
consisting of following
installations:
 - a Distilling plant
 - b Depot for filled acid
demi-johns
 - c Mechanical workshop
 - 10 Depot for steel cylinder
(department 5)
 - 11 Machine shop (several
turbines and ventilators
apparently for ventilation
in the plant), eight to ten
gas and acid tanks (diam.
50 feet, height 27 to 33
 - 12 Boiler house for the sup-
ply of the plant
 - 13 Locksmith's workshop
 - 14 Depot of chloride of lime
and lime kilns
 - 15 Department 5a, filling
station for chlorine bot.
 - 16 Automatic stone hammer
(crushing of limestones)
 - 17 Carbide shed
 - 18 Depot, contents unknown

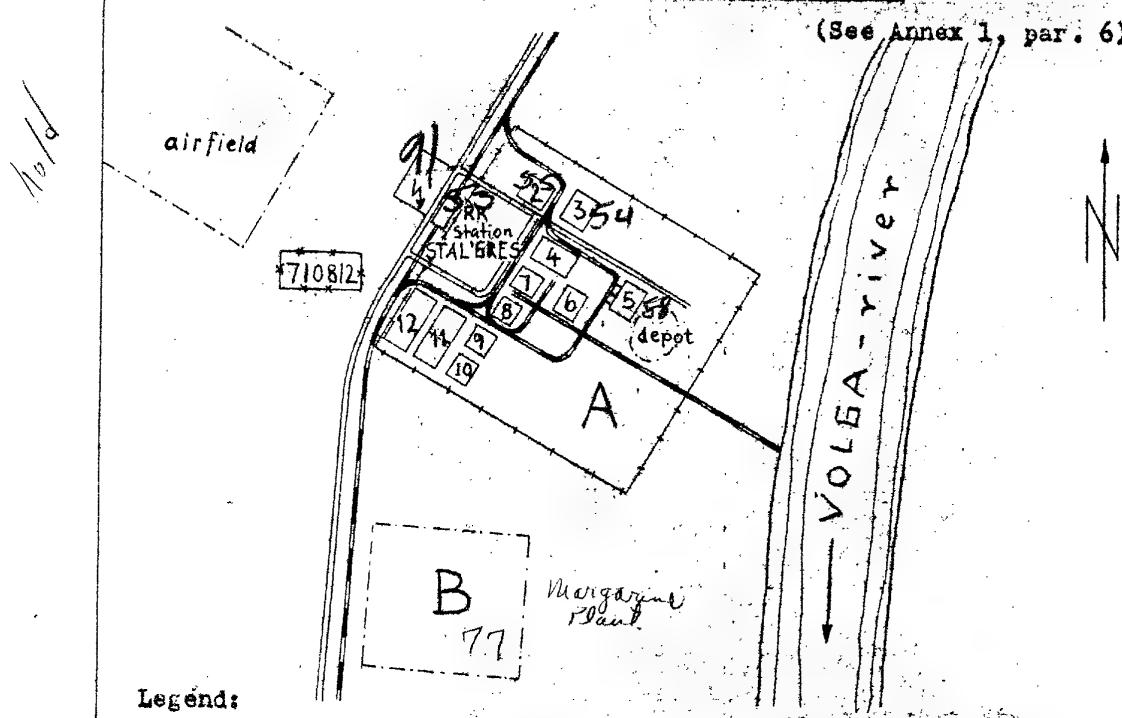
Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0



Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

Chemical and "margarine" Plant in BEKETOVKA

(See Annex 1, par. 6)



Legend:

- A BEKETOVKA Chemical Plant
- 1 "Stalgrass" Power Plant
 - 2 Messhall
 - 3 New building
 - 4 New building (department 4)
 - 5 Dressing of ammunition (department 3a) (260x65x16 feet)
Entrance prohibited to PWS. Two to three 20-ton carloads were delivered daily from the department 11a. Each car contained about 100 filled boxes measuring 28x10x6 inches.
 - 6 Oxygen filling station
 - 7 Chlorine department (department 5)
 - 8 Stone mill
 - 9 Charcoal depot
 - 10 Sulphur depot
 - 11 Dressing of shells (department 11a, 500x100x16 feet)
 - 12 Technical office
- B "Margarine" Plant

25X1

SECRET

Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

25X1

25x1

CONTROLLED DISTRIBUTION

Annex 7

Ammunition Plant in BEKETOVKA

CENTRAL INTELLIGENCE
AGENCY

(see Annex 1, par. 4)



Legend:

- A Repair of engines
 - B "Stalgres" Power Plant
 - C Ammunition and Chemical Plant

STALINGRAD

BEKETOVKA

EL'SHANKÁ

ation

RR stop

11

1

1

10

卷之三

1

三

10813

卷之三

5

710819

پہنچ

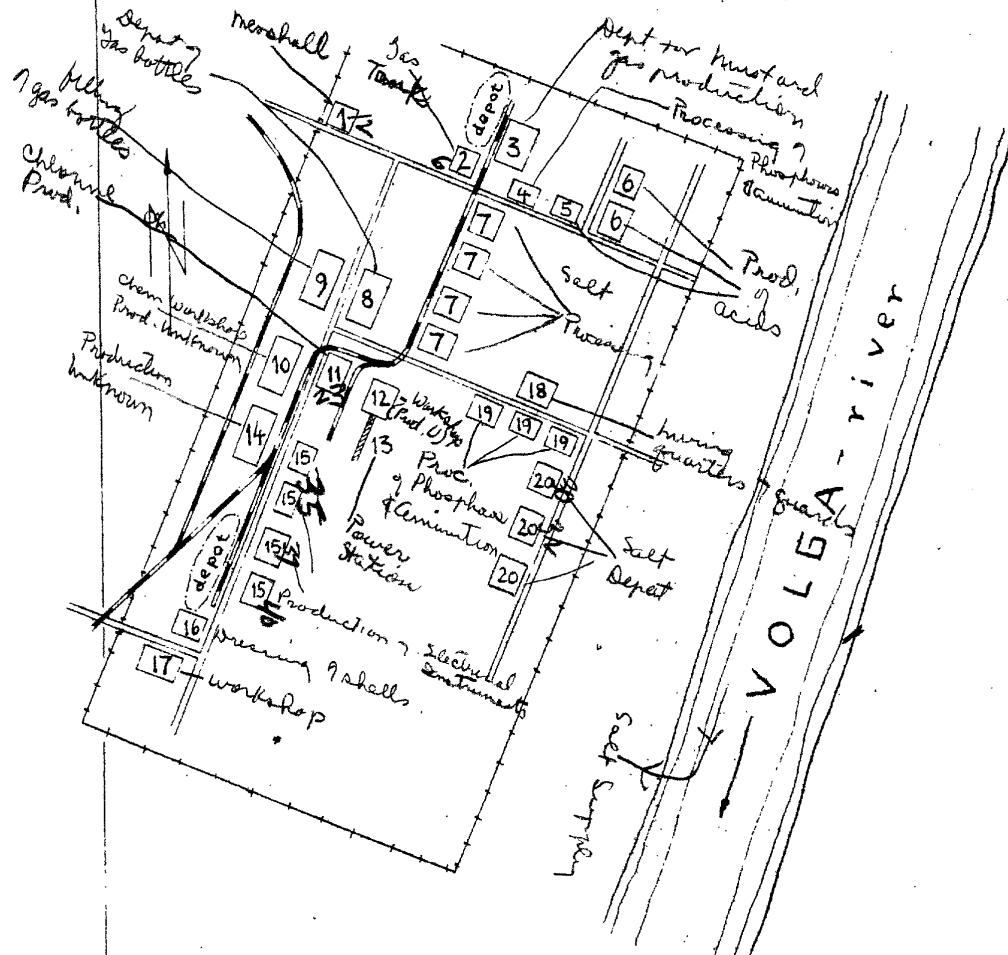
Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0

not to scale

CONTROLLED DISTRIBUTION

Annex 8 25X1

Chemical Plant in BEKETOVKA



Legend: See report

Approved For Release 2004/07/29 : CIA-RDP82-00457R004400600004-0
25X1

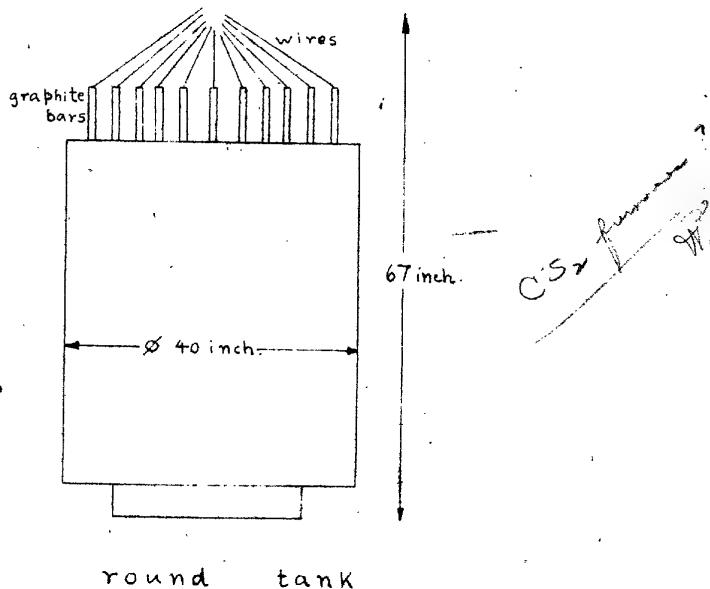
CONTROLLED DISTRIBUTION

Annex 9

25X1

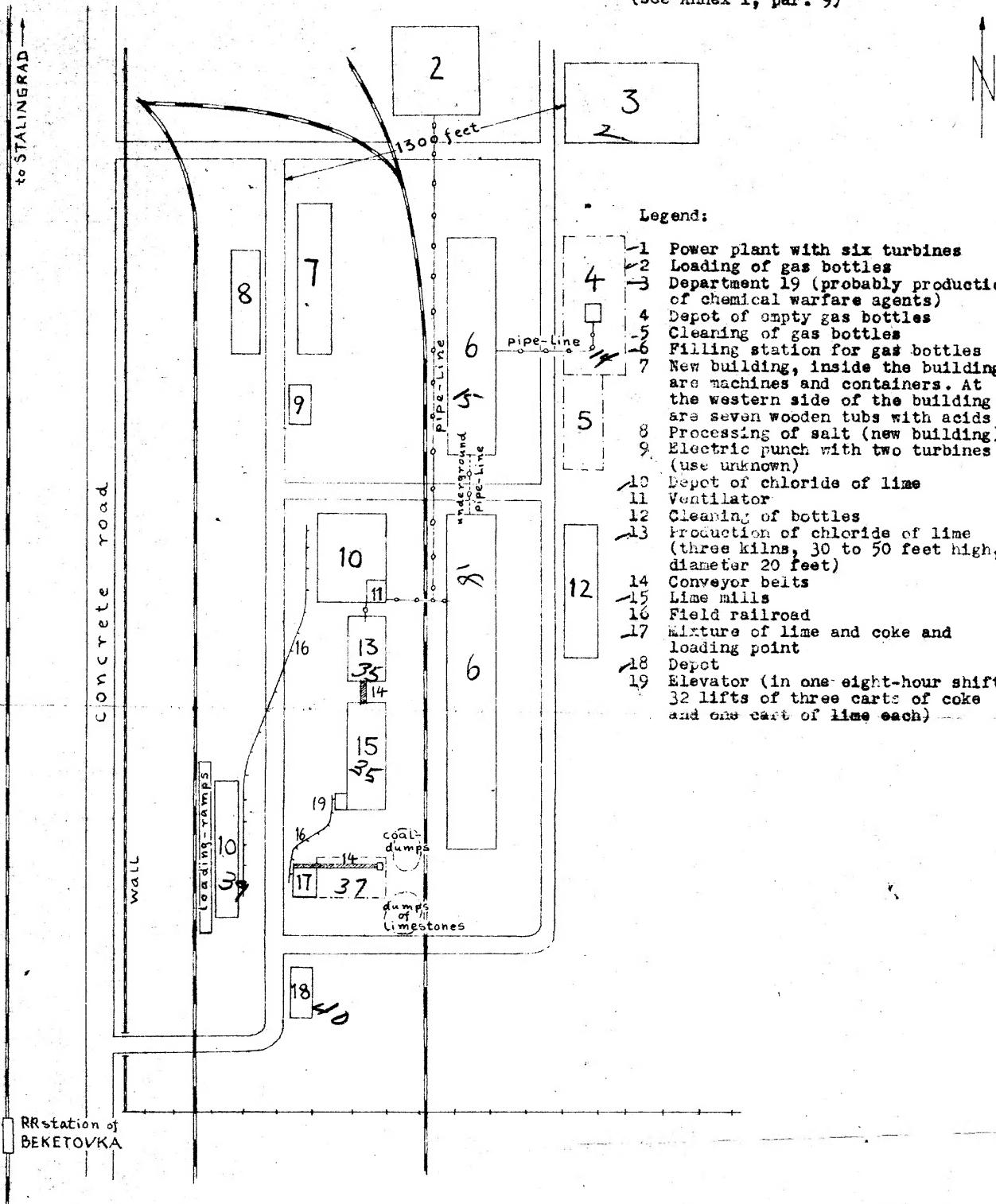
Round Containers with Graphite Electrodes for Electrolysis

(see Annex 1, par. 4)



Chemical Plant No. 91 in BEKETOVKA

(see Annex 1, par. 9)



CENTRAL INTELLIGENCE AGENCY

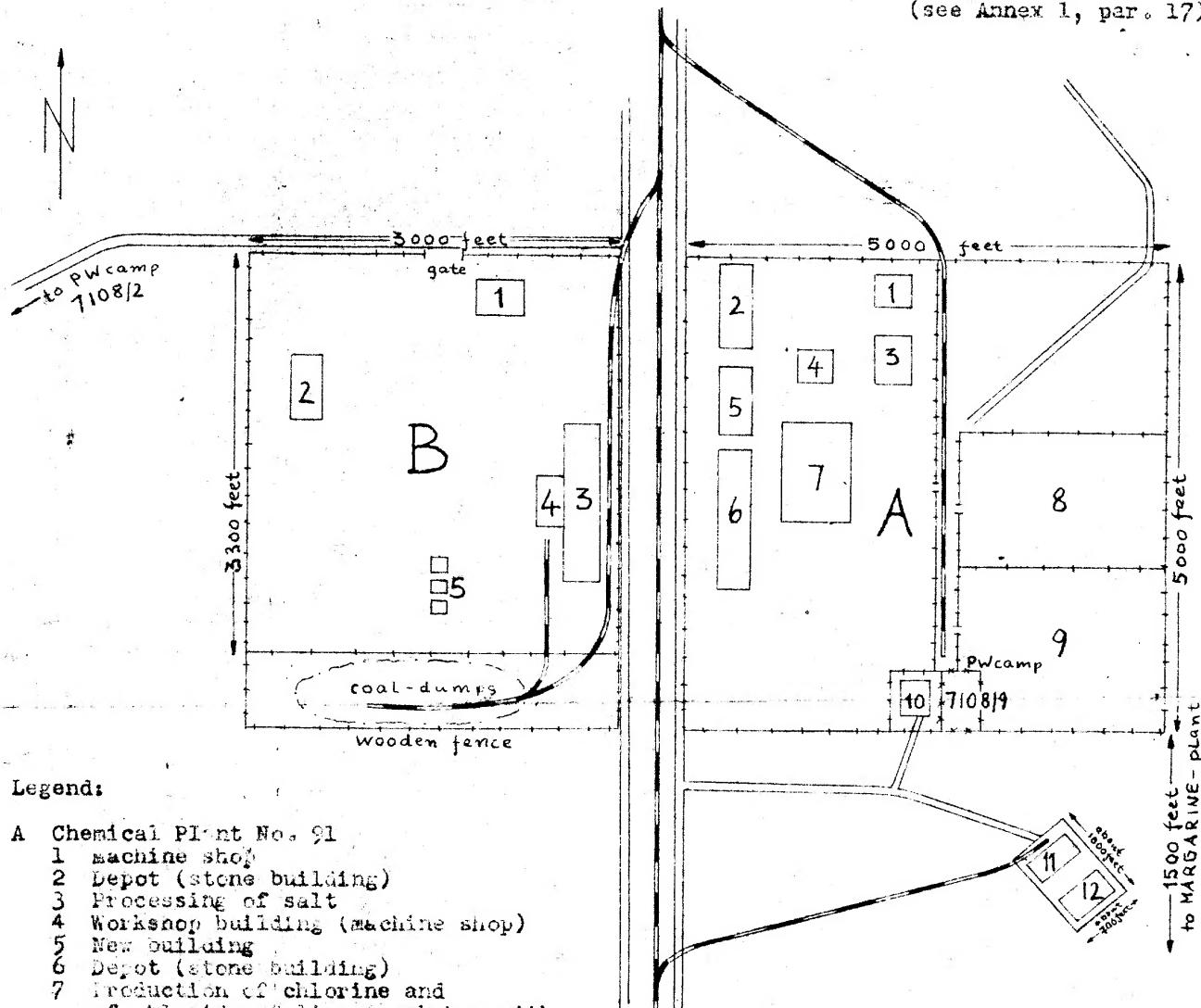
CONTROLLED DISTRIBUTION

Annex 15

25X1

Chemical Plant No. 91 and "Stalgres" Power Plant in BEKETOVA

(see Annex 1, par. 17)



Legend:

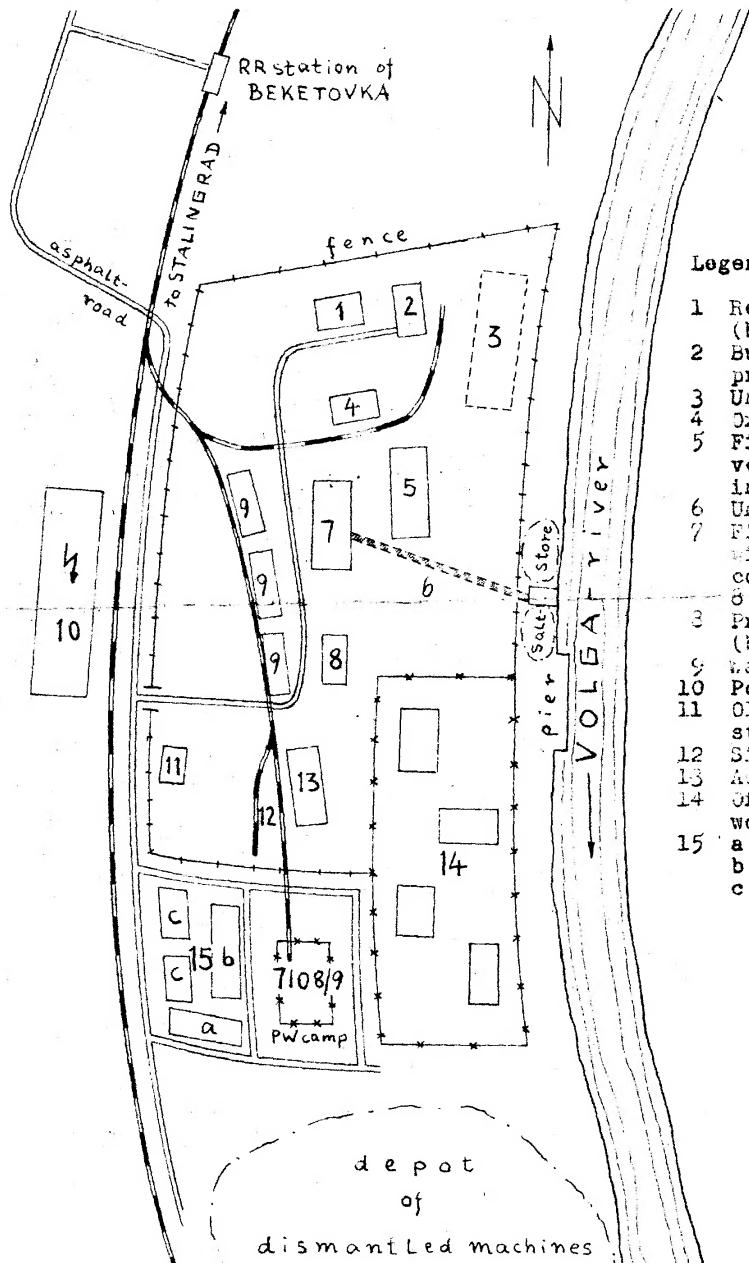
- A Chemical Plant No. 91
- 1 Machine shop
 - 2 Depot (stone building)
 - 3 Processing of salt
 - 4 Workshop building (machine shop)
 - 5 New building
 - 6 Depot (stone building)
 - 7 Production of chlorine and of chloride of lime (workshop with silo-shaped tower, in operation since ten years)
 - 8 Filling of gas shells
 - 9 Production of poison gas
 - 10 Administration building
 - 11 New workshop building for calcium and carbide production
 - 12 New workshop building for gasoline synthesis
- B "Stalgres" Power Plant
- 1 Two-story administration building
 - 2 Garages
 - 3 Main building (three-story structure, 260x100 feet)
 - 4 Machine shop with four turbines
 - 5 Wooden cooling towers (130 feet high)

25X1

CONTROLLED DISTRIBUTION

Annex 16

(see Annex 1, par. 18)

Chemical Plant No. 91 in BEKETOVKA

Legend:

- 1 Repair shop for gas bottles (brick smokestack)
- 2 Building with containers, production unknown
- 3 Underground ammunition dump
- 4 Oxygen installation
- 5 Filter installation with five ventilation tubes (decarbonation) in the roofing
- 6 Underground conveyor belt
- 7 Filter installation, 130x65x50 feet, with pipings, pump and earthenware containers (diameter 5 feet and about 8 feet high)
- 8 Production of chloride of lime (brick smokestack)
- 9 Warehouses (180x50 feet)
- 10 Power plant ("Stalgres")
- 11 Old administration building, wooden structure (32x27 feet)
- 12 Siding for phosphorus tank cars
- 13 Administration building with depot
- 14 Off-limits department with various workshop buildings and smokestacks
- 15 a Garage (200x50 feet)
b Plumbery (200x50 feet)
c Two four-story residential buildings

CENTRAL INTELLIGENCE AGENCY

not to scale

CENTRAL INTELLIGENCE AGENCY

CONTROLLED DISTRIBUTION

Annex 17

25X1

Map Sketch on the Surroundings of STALINGRAD

